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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,734

03/05/2007

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4952

84362 7590 04/20/2010
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EXAMINER

HOLMES, JUSTIN

ART UNIT

PAPER NUMBER

3655

MAIL DATE

DELIVERY MODE

04/20/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,734	KRAMER ET AL.	
	Examiner	Art Unit	
	JUSTIN HOLMES	3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/16/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 16, 2010 has been entered.
2. Claims 5 and 6 have been cancelled. Claims 1-4, 7, 18 and 19 are currently pending.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on April 16, 2010 has been considered by the examiner.

Claim Rejections - 35 USC § 112

4. The rejection of claims 7 and 19 under 35 USC 112, second paragraph as set forth in the Final Action dated December 22, 2009 is withdrawn in view of the amendments to the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent JP 61062640A to Teraoka et al. in view of U.S. Patent No. 6,945,898 to Szuba.

Regarding claims 1 and 2, as best understood by the Examiner, the Teraoka et al. patent teaches a differential drive with a rotatably arranged differential carrier in which a multi-plate coupling is arranged so as to be effective between the differential carrier and a sideshaft gear, the differential carrier having a dish-shaped carrier part 1 in which there are received sideshaft gears 7 and differential gears 5 and a dish-shaped cover 1a which receives the plates 13 of the multi- plate coupling 11. The inner plates of the multi-plate coupling 11 are held on a hub 9 that is connect one of the sideshaft gears 7a. See Fig. 1. Wherein the carrier part 1 and the cover 1a each comprise a base portion, a casing portion and a connecting portion are arranged so as to oppose one another to inter-connect the carrier part with the cover, such that the carrier part and the cover are oriented to extend away from each other at the connecting portions. See Figs. 1 and 2. The connecting portions of the carrier part 1 and cover part 1a that are shown to have a screw hole to connect them in Fig. 1.

The Teraoka et al. patent lacks a teaching that the cover on its circumference has apertures with blades.

The Szuba patent teaches a differential housing 12 having differential gears 40, 42 contained therein. It is also shown that a clutch assembly can be contained within the housing 12. See Figs. 4 and 7A and column 6, lines 47-61. It is also shown that a plurality of apertures 102 are formed in the housing 12 that are associated with blades 100 which have a centripetal effect on the surrounding medium for cooling the mechanism. See column 6, lines 62-7 and column 7, lines 1-18 and Figs. 8A, 8B and 9.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Teraoka et al. patent to include the lubrication scoops and apertures as taught by the Szuba patent in order to lubricate the differential to facilitate operation of the gears. See column 6, lines 62-65 of the Szuba patent.

7. Claims 3, 4, 7, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent JP 61062640A to Teraoka et al. in view of U.S. Patent No. 6,945,898 to Szuba and in view of U.S. Patent No. 6,460,677 to Roscoe.

Regarding claims 3, 4 and 18, as best understood by the Examiner, the Teraoka et al. patent lacks a teaching of an actuator supported by a sleeve for the multi plate coupling.

The Roscoe patent teaches a differential drive with a rotatably arranged differential carrier in which a multi-plate coupling is arranged so as to be effective between the differential carrier and a sideshaft gear. The differential carrier having a dish-shaped carrier part 12c in which there are received sideshaft gears 16, 17 and

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differential gears 29, and a dish-shaped cover 12b which receives the plates 22, 24 of the multi-plate coupling. The dish shaped carrier part 12c and the dish shaped cover 12b extend away from each other. The parts extend away from each other from the clutch plate labeled 26 in Fig. 2. The outer plates 22 of the multi-plate coupling are held in the cover 12b with a toothed arrangement. The inner plates 24 of the multi-plate coupling are form-fittingly held on a hub connected to one of the sideshaft gears 17. See column 3, lines 40-45. There is a sleeve 12d arranged on an outside of the cover 12b which axially and radially supports an actuator 70 for the multi-plate coupling. See Fig. 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Teraoka et al. patent to include the actuator arrangement to compress the clutch plates as taught by the Roscoe patent in order to allow the locking differential to be actuated at a standstill to prevent unwanted tire spin at start up.

Regarding claims 7 and 19, the cover 12b has axial bores in which there are positioned axially movable journals 41 for transmitting an axial movement from the actuator 70 to the multi-plate coupling 21. See column 3, lines 46-53 and Figs 2 and 3 of the Roscoe patent. It would have been obvious to one having ordinary skill in the art at the time the invention was made that there are multiple axial bores for the journals 41 since it is stated in column 3, lines 50 that the "tappets 41" is in the plural form which states that there is more than one tappet but only one is shown in the drawings.

Response to Arguments

8. Applicant's arguments with respect to claims 1-4, 7, 18 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Japanese Patent Application No. 3-217331 to Shinichi teaches that a locking differential can be actuated at a standstill to limit slip of the wheels when starting a vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN HOLMES whose telephone number is (571)272-3448. The examiner can normally be reached on 8:00am to 4:30pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUSTIN HOLMES/
Examiner, Art Unit 3655